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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/624,680	07/23/2003	Tetsuya Otsuki	116568	6686

25944 7590 08/04/2005

OLIFF & BERRIDGE, PLC
P.O. BOX 19928
ALEXANDRIA, VA 22320

EXAMINER
TRAN, LONG K

ART UNIT	PAPER NUMBER
2818	

DATE MAILED: 08/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/624,680	OTSUKI, TETSUYA	
	Examiner	Art Unit	
	Long K. Tran	2818	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 July 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 113* is/are pending in the application.

4a) Of the above claim(s) *1 – 95. 98 – 104, 106 - 111 and 113* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *95,96,105 and 112* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Amendment

1. This office action is in response to Amendment filed on July 05, 2005:

2. Claims **1 – 95. 98 – 104, 106 - 111** and **113** have been withdrawn from consideration.

3. Claim **96** has been amended.

4. Claims **96, 95, 105** and **112** are presented for examination.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims **96, 97** and **112** are rejected under 35 U.S.C. 102(b) as being anticipated by Wajnarowski et al. (US Patent No. 5,331,203).

7. Regarding claims **96** and **112**, Wajnarowski discloses semiconductor device 10 (fig. 1) comprising:

a substrate 12 (fig. 1(b)) including a depression (cavity) section 14 (fig. 1; column 9, lines 62 – 64), the depression 14 having and inner wall surface, the inner wall surface being curved or inclined respect to the substrate 12 (fig. 1);

a semiconductor chip 20 (fig. 1) mounted in the depression (cavity) section of the substrate with a surface of the semiconductor chip on which an electrode 24 (fig. 1) is formed facing upward (col. 10, lines 1 – 3);

a first conductive layer 34 (fig. 1) formed over the substrate and the semiconductor chip so that the first conductive layer is electrically connected with the electrode 24 of the semiconductor chip (column 10, lines 8 – 12);

an insulating layer 36 (fig. 1; column 10, lines 61 and 62), at least a part of the insulating layer being disposed on the first conductive layer (figure 1);

and a second conductive layer 38 , (fig. 1; column 11, lines 1 – 6) at least a part of the second conductive layer being disposed on the insulating layer over the first conductive layer 34.

Regarding claim **97**, Wajnarowski discloses a polyetherimide resin layer formed in the depression section in which the semiconductor chip is mounted, wherein the first conductive layer is formed to pass over the resin layer (column 4, lines 25 – 60).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims **105** is rejected under 35 U.S.C. 103(a) as being unpatentable over Wajnarowski et al. (US Patent No. 5,331,203) in view of Gorowitz et al. (US Patent no. 5,524,339).

Regarding claim **105**, Wajnarowski discloses the claimed invention of claim 96 but fails to teach a circuit board \on which the semiconductor device is mounted.

However, Jeong discloses semiconductor device 30 (figs. 2 and 3) using metal patterns 32 of the circuit board 31 (figs. 2 and 3) as an external connection means (column 3, lines 48 – 57).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide the device of Wajnarowski with the circuit board of Jeong, in order to increase the operational speed of the semiconductor chip using the circuit board as an external connection means (column 2, lines 1 – 5).

Response to Arguments

10. Applicant's arguments with respect to claims 96, 97, 105 and 112 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Long K. Tran whose telephone number is 571-272-1797. The examiner can normally be reached on Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on 571-272-1787. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LKT

July 31, 2005

David Nelms
Supervisory Patent Examiner
Technology Center 2800